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KERN COUNTY HEALTH DEPARTMENT
AIR POLLUTION CONTROL DISTRICT

SFUND RECORDS CTR
2335624

LEON M. HEBERTSON, M.D.
Director of Public Health
Air Pollution Control Officer

REFERENCE 41



SOURCE TEST

KEYSTONE RESOURCES - CUSTOM RECOVERY DIVISION

Furnace #1 (5006001)

January 18, 1978

Test Performed By: V. Leung
J. Reyes

Process Observations By: D. Stein

Report Prepared By: V. Leung

Report Reviewed By: L. Landis

A handwritten signature in cursive script, appearing to read "L. Landis", is written over the printed name "L. Landis" in the "Report Reviewed By" line.

SOURCE TEST
KEYSTONE RESOURCES

Unit Tested: Furnace #1

Date Tested: January 18, 1978.

Purpose of the Test: This test was conducted to determine the concentration and emission rate of particulate matter emitted in the exhaust stream.

Source Test Description: Two particulate samples were collected isokinetically while traversing the sampling probe across the duct at 24 sampling points representing equal areas of the duct cross section. One sampling port was employed to collect each sample. The port was located approximately 10 feet downstream and 6 feet upstream from the nearest bend or other source of turbulence.

Sampling Method: (Refer to the diagram on page 14) The method employed to collect these samples is generally described in Joy Manufacturing's Bulletin WP-50 and the Los Angeles Source Testing Manual.

Moisture Content: (Refer to pages 16 and 19) The preliminary value was determined by Orsat analysis from combustion process. The reported value was determined by measuring the impinger condensate.

Duct Gas Density: (Refer to pages 16 and 19) The gas density was based on the molecular weight of dry air which was analyzed by Orsat, corrected for moisture and referred to air.

Duct Temperature: The duct temperature was measured with a potentiometer.

Velocity: The velocity was determined with a slant manometer and an "S" type pitot tube which was attached to the probe.

Results:

Sample Run	Emissions		Process Weight T/hr	%Isokinetic
	*gr/scf	lb/hr		
A	0.199	1.9	0.40	113
B	0.137	1.4	0.36	113
Mean	0.168	1.7	0.38	113

*@12% CO₂

INSPECTION/INVESTIGATION REPORT

PLACE OF INSPECTION/INVESTIGATION: KEYSTONE RESOURCES - CUSTOM RECOVERY DIVISIONINSPECTOR(S)/INVESTIGATOR(S): David SteinDATE OF INSPECTION/INVESTIGATION: 18 January 1978 / Source testCONTACT(S): Bill Jones
Jim MeltonTITLE: Plant Supt.
Plant ForemanRESULTS OF INSPECTION/INVESTIGATION:

On 18 Jan. 78, a source test on the #1 furnace at Keystone Resources was conducted by KCAPCD personnel. Vincent Leong and Juan Reyes collected two 1 hr. samples, Larry Landis monitored the sample collection procedures, and David Stein observed the process operating conditions. The following typical operating parameters were recorded during the test:

	<u>Furnace #1</u>	<u>Furnace #2</u>
operating schedule	24 h/d, 5 d/w	24 h/d, 5 d/w
nat'l gas consumption	3445 cfh	2935 cfh
secondary chamber temperature	1600 F	1400 F
* no. secondary burners	(3) type 2	(1) type 1 (1) type 2
* no. primary burners	(2) type 1	(2) type 2
** charge weight	600 to 800 lbm	2600 to 2800 lbm
charge time	40 to 60 min	30 to 50 min

*type 1 burner: Eclipse series 200
max. input - 1.4 MM Btu/hr
motor - 1/25 hp

type 2 burner: Eclipse SIB
max. input - 2 MM Btu/hr
motor - 1/16 hp

Several items of interest were noted during the test:

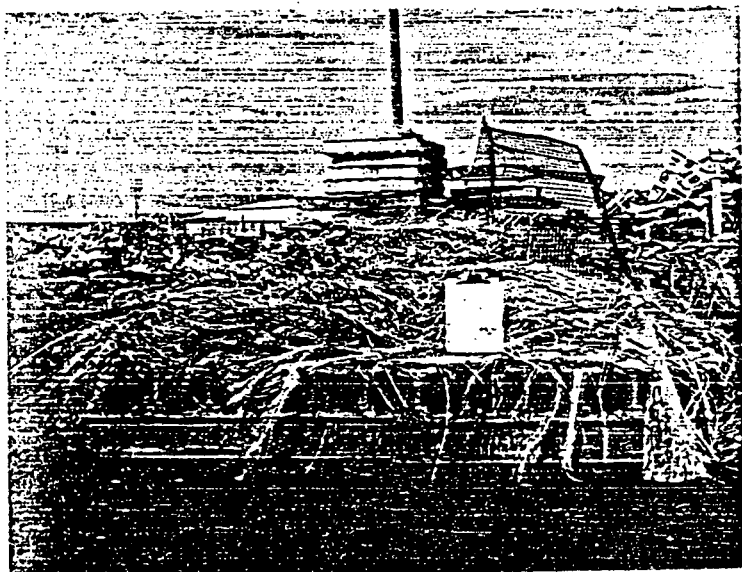
1. No visible emissions were observed.
2. The back burner on the primary chamber (refer to diagram attached) was operating intermittently. According to the operators, it is only run for the first 10 min. of the charge to enhance the combustion process. However during no.1 sample run, it was run continuously.
3. According to plant records, excessive charges are sometimes run. These always occurred after 5:00 P.M.

** These figures reflect information obtained from plant records. Actual charge weights during test were:

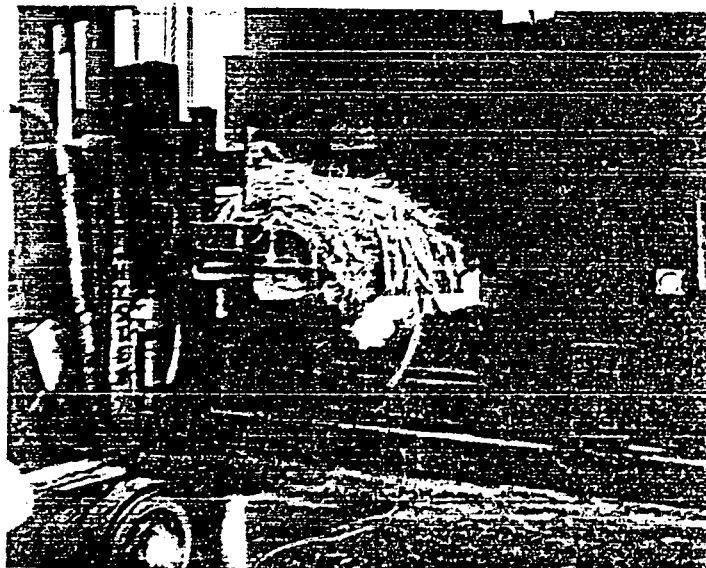
Sample #1: 806 lbm/hr (charge was a mixture of classes 10 & 416)

Sample #2: 714 lbm/hr (charge was exclusively class 416)

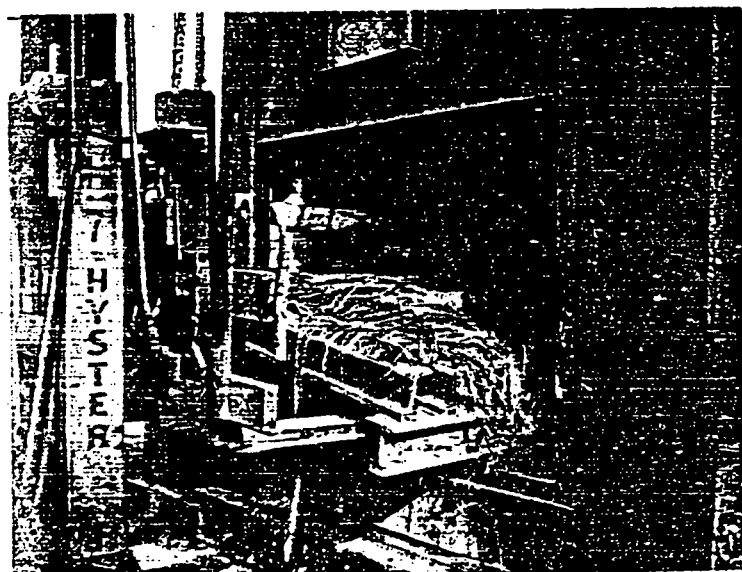
Class 10 material (paper insulated wire) before incineration.
Approx. weight: 500 lbm.



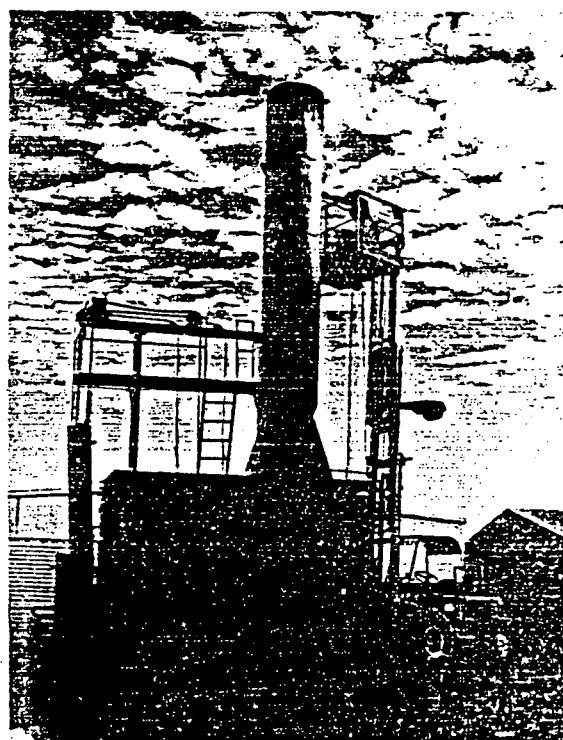
Class 416 material (plastic insulated wire) before incineration @ 550 lbm.



Class 416 material after incineration (same pallet as in upper right).

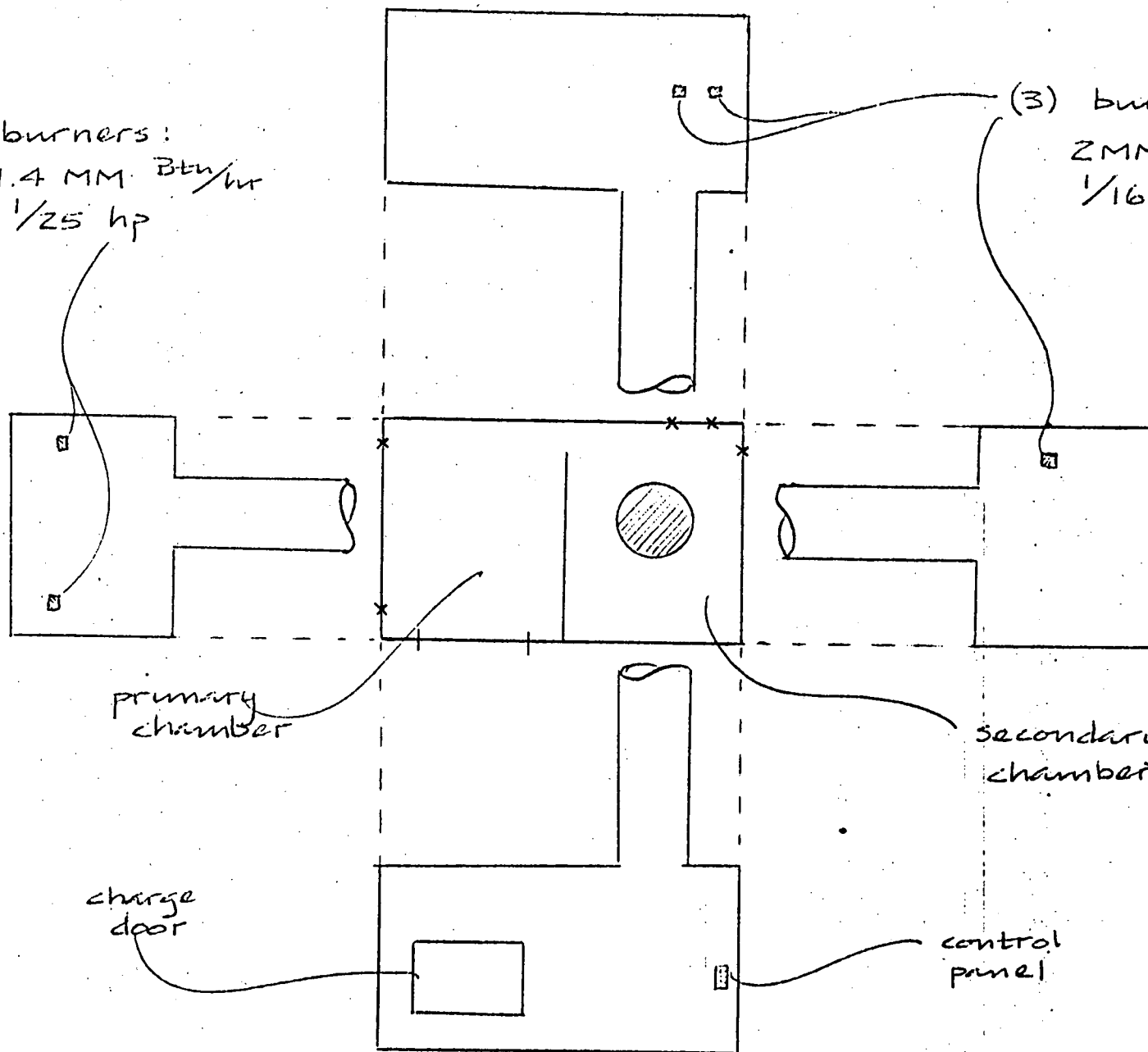


Exhaust stack of furnace #1 as it appeared during test (e.g. no visible emissions)



(2) burners:
1.4 MM Btu/hr
1/25 hp

(3) burners:
2MM Btu/hr
1/16 hp

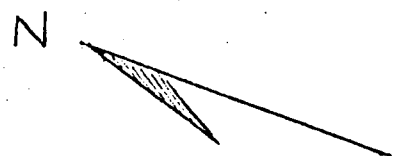


primary chamber

secondary chamber

charge door

control panel



FURNACE

1

INSPECTION/INVESTIGATION REPORT

PLACE OF INSPECTION/INVESTIGATION: Keystone Resources

INSPECTOR(S)/INVESTIGATOR(S): Paul Calvillo

DATE OF INSPECTION/INVESTIGATION: Jan. 23, 1979

CONTACT(S): Jim Melton

TITLE: Plant Manager

RESULTS OF INSPECTION/INVESTIGATION:

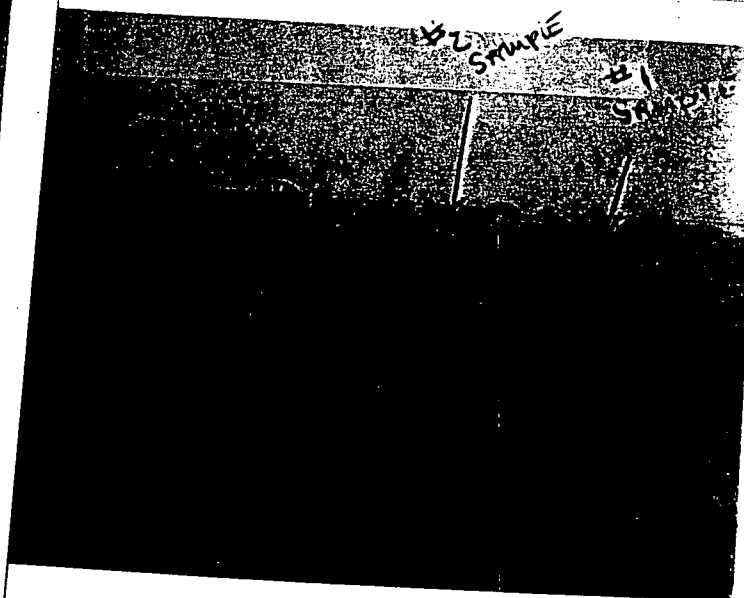
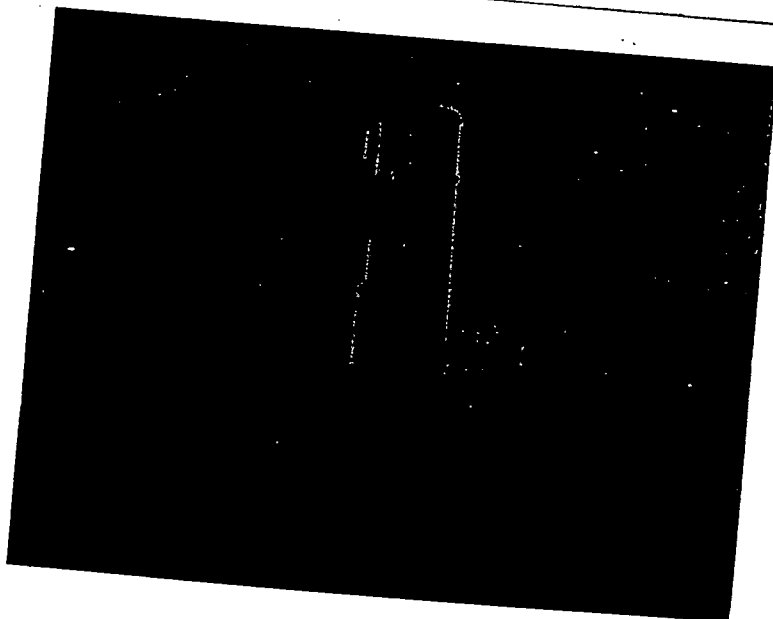
A source test of Keystone Resources furnace #1 (southernmost furnace) was conducted by Chemecology Corp. and monitored by this inspector. Two samples were collected during the two hour test.

The charge for the furnace consisted of class 4 material. A photograph of the material to be processed is attached. Also, a photograph of the test team in action.

The inspector was unable to detect any visible emissions due to weather conditions.

The following process weight and natural gas consumption data were obtained.

	<u>process wt.</u>	<u>natural gas</u>	<u>charge</u>
Test #1, sample #1	2662 lbm/hr.	39.16 cfm	class 4
Test #1, sample #2	2774 lbm/hr.	39.83 cfm	class 4



PLACE OF INSPECTION/INVESTIGATION: Keystone Resources- costum recovery division

INSPECTOR(S)/INVESTIGATOR(S): Paul Calvillo

DATE OF INSPECTION/INVESTIGATION: Feb. 15, 1979

CONTACT(S): Mr Bill Jones
Mr Jim Melton

TITLE: Mgr.
Asst Mgr.

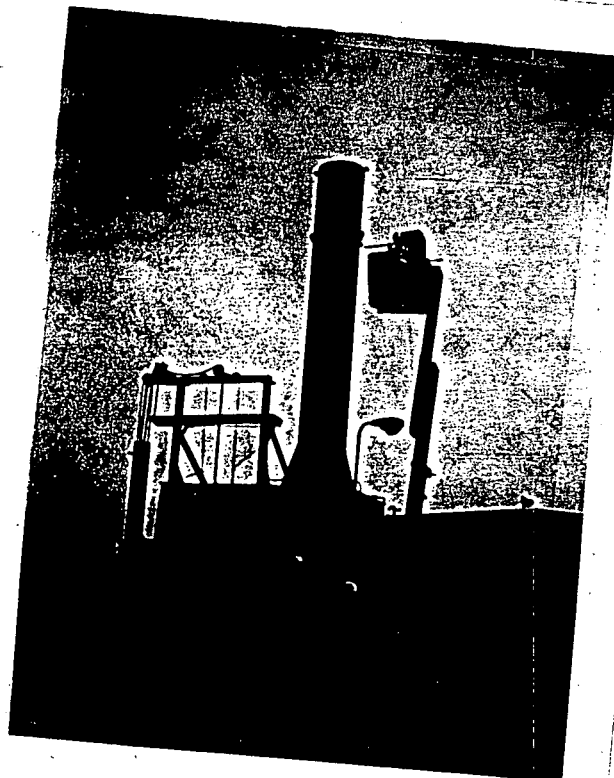
RESULTS OF INSPECTION/INVESTIGATION:

An inspection was conducted at Keystone Resources to monitor a source test of furnace #1 conducted by Rockwell International Co. One test consisting of two samples was conducted using class 4 material as furnace charge. The second sample was collected during the incineration of two different charges.

The first sample was collected during the incineration of one pallet of 2638 lbs. of class 4 material for a total of 49 minutes and a natural gas consumption of 40 cfm. The second sample was collected during the last 29 minutes of incineration of one pallet of 2716 lbs. of class 4 material with a natural gas consumption of 41.7 cfm and the complete incineration of a pallet of 2540 lbs with a natural gas consumption of 39.8 cfm for a total of 80 minutes.

No visible emissions were observed during the test.

CLASS 4 MATERIAL



INSPECTION/INVESTIGATION REPORT.

PLACE OF INSPECTION/INVESTIGATION: Keystone Resources

INSPECTOR(S)/INVESTIGATOR(S): Paul Calvillo

DATE OF INSPECTION/INVESTIGATION: Feb. 20 & 21, 1979

CONTACT(S): Bill Jones
Jim Melton

TITLE: Manager
Asst. Manager

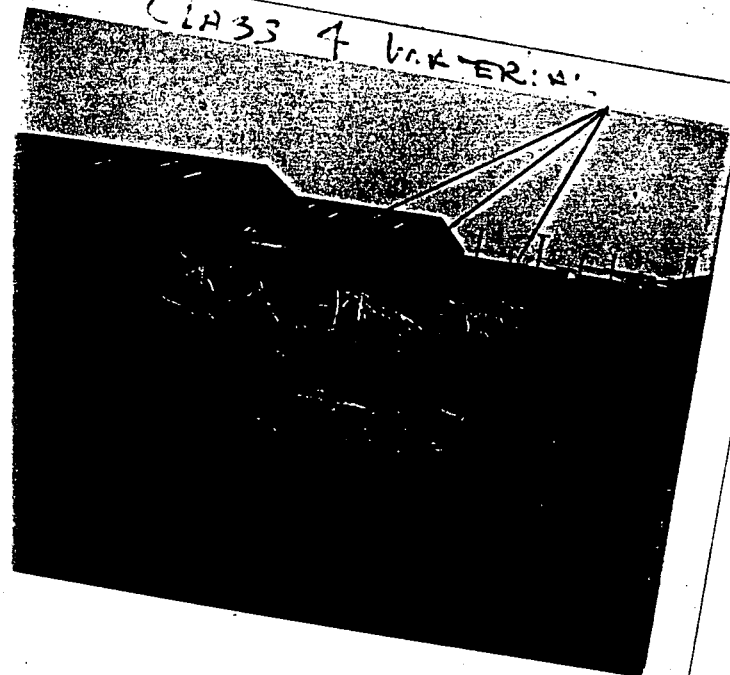
RESULTS OF INSPECTION/INVESTIGATION:

An inspection was conducted at Keystone Resources to monitor a source test of furnace #1 by Rockwell International Co. One sample was collected on Feb. 20 and the other on Feb. 21.

The first sample was collected during the processing of 3 separate charges of class 4 material. The first charge weighed 2632 lbs. and the processing consumed 1920 cubic feet of natural gas in 48 minutes. The second charge weighed 2516 lbs. and the processing consumed 1900 cubic feet of natural gas in 47 minutes. The third charge weighed 2524 lbs. and the processing consumed 1490 cubic feet of natural gas in the 37 minutes it took to complete the sample collection. Total sampling time of the first sample was 100 minutes. No visible emissions were observed during the sample collection.

The second sample was collected during the processing of 2 separate charges of class 4 material. The first charge weighed 2648 lbs. and the processing consumed 2440 cubic feet of natural gas in 61 minutes. The second charge weighed 2612 lbs. and the processing consumed 510 cubic feet of natural gas in the 13 minutes it took to complete the sample collection. Total sampling time of the second sample was 60 minutes. No visible emissions were observed during the sample collection.


CLASS 4 WATER



Office Memorandum • KERN COUNTY

TO : Tom Paxson

DATE: March 19, 1979

FROM : Vincent Leung for Larry Landis 

SUBJECT: Source Test of Keystone Resources Industrial Incinerator by Rockwell International, February 15, 20 and 21, 1979.

There were totally five sample runs, but were only two were considered to be valid:

- (1). First sample run(Feb. 15) was invalidated because the Pyrex probe collapsed due to extremely high stack temperatures.
- (2). Second and third sample runs(Feb. 15) were not acceptable because no continual CO₂ measurements were made during the source testing.
- (3). Fourth sample run(Feb. 20) was successfully completed and was acceptable by the District.
- (4). Fifth sample run(Feb. 20) was not acceptable because the second incinerator was accidentally turned on. Natural gas to both incinerators is measured by the same gas meter; therefore, the amount of natural gas consumed during the test could not be determined.
- (5). Sixth sample run(Feb. 21) was acceptable by the District.

A review by the District was based on the data and calculations of samples four and six only. Here are the results of the test:

Sample Run(on Lead-Sheathed Cables)	Gr/ SCF @12% CO ₂	Mass Emission lb/h	Process Wt. lb/h
Four	0.056	0.14	2600
Six	0.101	0.15	2600
Mean	0.079	0.15	
Allowed	0.3	4.2	
By Rule	407.1	405	

Emission Factors: (for Lead-Sheathed Cables)

0.12 #/T.